

* HAVE OUT HW

* WARM UP: p. 115 #17 & 18

$$\textcircled{17} \textcircled{a} z = \frac{x - \bar{x}}{s}$$

$$s \cdot 0 = \frac{170 - \bar{x}}{s}$$

$$\bar{x} = \textcircled{170 \text{ cm}}$$

$$1 = \frac{177.5 - \bar{x}}{s}$$

$$1 = \frac{177.5 - 170}{s}$$

$$\textcircled{s = 7.5 \text{ cm}}$$

$$\textcircled{b} \quad 2.5 = \frac{X - 170}{7.5}$$

$$X = 188.75 \text{ cm}$$

$$\textcircled{18} \textcircled{a} \quad \bar{X} = 162.5 \text{ cm}$$

$$1 = \frac{169 - 162.5}{s}$$

$$s = 6.5 \text{ cm}$$

$$\textcircled{b} \quad -1.5 = \frac{X - 162.5}{6.5}$$

$$X = 152.75 \text{ cm}$$

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7) (a) So that the area is 1 (or 100%). $1 \times 1 = 1 = 100\%$

(b) mean = 0.5

(c) median = 0.5 If the curve is symmetric, mean = Med

(d) 40%

8) (a) height = $1/2$ so that area = 1 = 100%



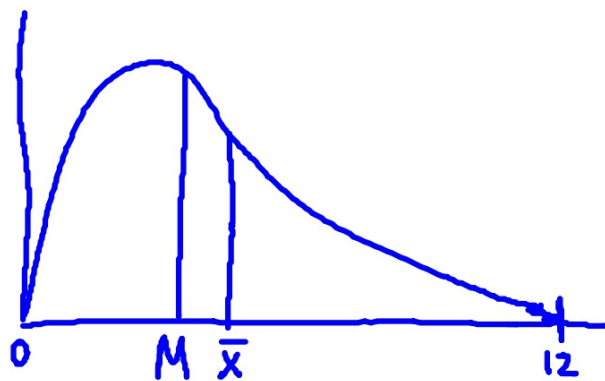
(b) $(0.4)(1/2) = 20\%$

(c) Med = 1

Q1 = 0.5

Q3 = 1.5

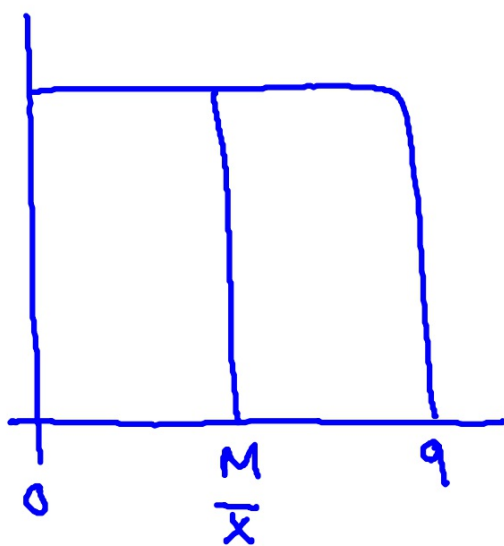
9)



$$M \approx 4.5$$

$$\bar{x} \approx 5.5$$

10)



$$M \approx \bar{x} \approx 4.5$$

11) (a) Shape = symmetric, unimodal

Med = A

Mean = A

(b) Shape = left skewed, unimodal

Med = B

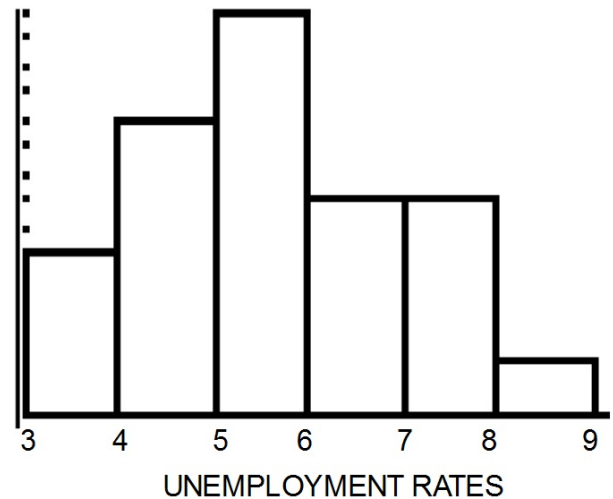
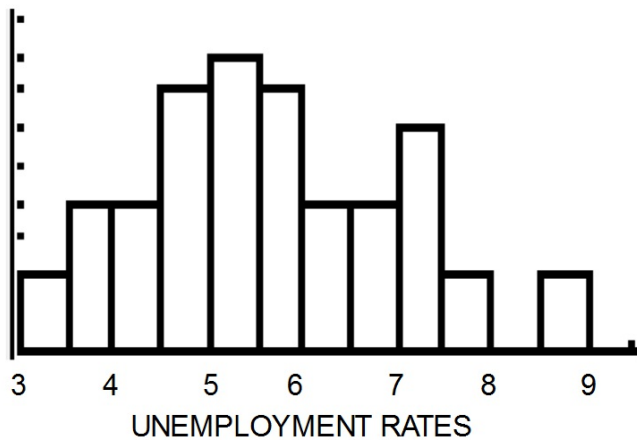
Mean = A

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|-----|-------------|----------|----------|
| 13) | (a) Med = B | Mean = C | Mode = A |
| | (b) Med = A | Mean = A | Mode = A |
| | (c) Med = B | Mean = A | Mode = C |

14) Martin is wrong. Being in the 90th percentile for cholesterol is not good! It means his cholesterol level is equal to or higher than 90% of other men like him. This means his cholesterol is VERY high.

15) (a)



(b) mean = 5.598
std dev = 1.391
n = 50

min = 3.2
Q1 = 4.6
Med = 5.45

Q3 = 6.6
Max = 8.8

Right skewed, center at median of 5.45%, IQR of 2%, range of (3.2, 8.8)%.

(c) * sort data

Illinois = $40/50 = 80\text{th percentile}$

This means that Illinois has an unemployment rate that is equal to or higher than 80% of other states.

(d) 40th percentile = 20th observation (out of 50)

40th percentile = 5.1 = Texas

$$Z = \frac{5.1 - 5.598}{1.391} = -0.358$$